

# T&R MANUAL, KC-130FRT

## CHAPTER 5

### KC-130 FLIGHT MECHANIC

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## CHAPTER 5

## KC-130 FLIGHT MECHANIC

500. MARINE AERIAL REFUELING SQUADRON (KC-130FRT) UNIT CORE COMPETENCY

1. Background. Marine Aviation plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The ultimate goal of Marine Aviation is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while at the same time preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and the ability to quickly and effectively plan for crises and/or contingency operations thereby ensuring Marine Aviation remains ready for combat when and where the need arises. The KC-130FRT T&R Manual represents the collaborative effort of KC-130FRT Subject Matter Experts who designed training standards to maximize the full combat capabilities of the KC-130FRT and its crew. These standards, intrinsic in the core competency section, describe and define unit capabilities and requirements necessary to maintain like-squadron proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards to ensure aircrew maintain a common base of training and depth of combat capabilities. Together, the T&R comprises a building block approach to ensure that trained aircrews remain ready, relevant, and fully capable of supporting the MAGTF commander.

2. VMGR Mission. Support the MAGTF Commander by providing aerial refueling and assault support, day or night under all weather conditions during expeditionary, joint, or combined operations.

3. Mission Essential Task List (METL)

- a. (UJTL TA 1.1.1) Conduct Tactical Airlift
  - Conduct assault support transport.
- b. (UJTL TA 1.1.4) Conduct Sea and Air Deployment Operations
  - Maintain the capability to deploy and operate from advanced bases, expeditionary airfields and forward operating bases.
  - Perform organizational maintenance on assigned aircraft.
- c. (UJTL TA 1.2.2) Conduct Airborne Operations
  - Provide air delivered assault support transport of combat troops, equipment and supplies.
  - Provide support for casualty evacuation operations.
  - Maintain self-defense capability from ground-to-air and air-to-air threats.
- d. (UJTL TA 4.2) Distribute Supplies and Provide Transport Services
  - Conduct aerial re-supply.
  - Provide support for mobile Forward Arming and Refueling Points (FARPS).
  - Provide support for Rapid Ground Refueling (RGR) of aircraft and vehicles.
- e. (UJTL TA 4.2.3) Conduct Air Refueling
  - Provide Tactical and Long Range Aerial Refueling.
- f. (UJTL TA 5) Exercise Command and Control

- Provide Airborne Platform for the Airborne DASC Command Post.
- g. (UJTL TA 6.2) Conduct Joint Personnel Recovery
  - Conduct Tactical Recovery of Aircraft and Personnel (TRAP) operations.
  - Augment local Search and Rescue (SAR) assets
- h. (UJTL TA 6.4) Conduct Noncombatant Evacuation
  - Provide support for evacuation operations.

4. Table of Organization. Refer to Table of Organization 8820 and 8821 managed by Total Force Structure, MCCDC, for current authorized organizational structure and personnel strength for KC-130FRT units. As of this publication date, KC-130F/R/T units are authorized:

Squadron  
 12 Aircraft  
 42 Pilots [26 TPC/16 CP (T2P or T3P)]  
 23 TSOs  
 25 Flight Engineers  
 24 Loadmasters  
 24 Flight Mechanics

Detachment  
 6 Aircraft  
 19 Pilots [11 TPC/8 CP (T2P or T3P)]  
 11 TSOs  
 12 Flight Engineers  
 12 Loadmasters  
 12 Flight Mechanics

5. Core Capability. A core capable squadron is able to sustain 9 sorties on a daily basis during contingency/combat operations. The above sortie rates are based on 3.0 hour average sortie duration and assumes > 70 percent FMC aircraft and > 90 percent T/O aircrew on hand. If unit FMC aircraft < 70 percent or T/O aircrew < 90 percent, core capability will be degraded by a like percentage. A core capable squadron is able to accomplish all tasks designated in the unit METL from a main or expeditionary base.

6. METL/Core Skill Matrix. KC-130FRT core skills directly support the METL as follows:

	KC-130FRT CORE SKILL										CORE PLUS	
METL	AR	TACNAV	FORM	RGR	LRNAV	THRX (I)	THRX (R)	ALZ	NSQ	AD	LRAR	DEFTAC
A. Conduct Tactical Airlift		X	X		X	X	X	X	X			X
B. Conduct Sea and Air Deployment Operations			X		X	X	X	X	X		X	X
C. Conduct Airborne Operations		X	X		X	X	X		X	X		X
D. Distribute Supplies and Provide Transport Services		X		X	X	X	X	X	X	X	X	X
E. Conduct Air Refueling	X	X	X		X	X	X		X		X	X
F. Exercise Command and Control					X	X	X		X			X
G. Conduct Joint Personnel Recovery	X	X	X	X	X	X	X	X	X	X	X	X
H. Conduct Noncombatant Evacuation	X	X	X	X	X	X	X	X	X		X	X

7. KC-130FRT Core Model Minimum Requirements (CMMR). Squadron core competency reflects the minimum level of competency a squadron must achieve to perform its core capability. Squadron core competency is measured in terms of minimum Core Skill Proficiency (CSP) and minimum numbers of flight leaders per paragraphs a and b below:

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered Core Competent, a unit must possess the following numbers of crews who are proficient in each core skill (Unit CSP). In order to be considered proficient in a core skill (individual CSP), a crewmember must attain and maintain proficiency in core skill events, as delineated in paragraphs (1) and (2) below.

\* NOTE: DEFTAC and Long Range AAR (LRAR) are core plus skills. Proficiency in DEFTAC and LRAR is not required to obtain unit CSP and will not contribute to unit T-level readiness. Below are KC-130 community recommended unit/individual CSP standards for these skills.

KC-130FRT Unit CSP Requirements							
CORE SKILL *CORE PLUS	Pilot	Copilot	TSO	FE	LM	FM	Crews
AR	14	14	14	14	14	14	14
TACNAV	9	9	9	9	9	9	9
FORM	8	8		8			8
LRNAV	12	12	12	12	12	12	12
THRX(I)	6	6	6	6	6	6	6
THRX(R)	8		4	4			4
ALZ	9	9	9	9	9	9	9
RGR	6	6		6	6	6	6
NSQ	9	9	9	9	9	9	9
AD	4	4	4	4	8	4	4
**CPL					18		18
*LRAR	2		2				1
*DEFTAC	2/2		2	2	2	2	2

KC-130FRT Unit CSP Requirements Detachment							
CORE SKILL	Pilot	Copilot	TSO	FE	LM	FM	Crews
AR	7	7	7	7	7	7	7
TACNAV	5	5	5	5	5	5	5
FORM	4	4		4			4
LRNAV	6	6	6	6	6	6	6
THRX(I)	3	3	3	3	3	3	3
THRX(R)	4		2	2			2
ALZ	5	5	5	5	5	5	5
RGR	3	3	3	3	3	3	3
NSQ	5	5	5	5	5	5	5
AD	2	2	2	2	4	2	2
**CPL					9		9
LRAR	1		1				1
DEFTAC	4		2	2	2	2	2

\*\* CPL is the Cargo and Passenger Loading core skill that applies to loadmasters only and is not included in the METL Core Skill Matrix.

(1) Events Required to Attain Individual CSP. To initially attain CSP, a crewmember must successfully complete all of the T&R events listed in the chart below for that core skill:

KC-130 Flight Mechanic	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THRX(I)	THRX(R)	NS	DEFTAC
T&R event requirements to attain competency	210 211* 212 213* 313	274*	271* 272	241*	231*	250*	220* 223 224 321	260*	360	203* 204*	461 462
Notes: 1. Some events are duplicated in more than one category but not in the overall total. 2. "*" Denotes a Refresher Flight Mechanic or someone who needs to regain qualification(s).											

(2) Events Required to Maintain Individual CSP. To maintain CSP, a crewmember must maintain proficiency in all of the T&R events listed in the chart below for that core skill.

KC-130 Flight Mechanic	RW/FW AR	RGR	ALZ EAF	AD	FORM	LONG RANGE NAV	TACNAV	THR(X)I	THR(X)R	NS	DEFTAC
T&R event requirements to maintain competency	211 213	274	271	241	231	250	224 321	260	360	204 205	461 462

b. Minimum Combat Leader Requirements. NA.

8. Qualifications And Designations Table. The table below delineates T&R events required to be completed to attain initial qualifications, re-qualifications, and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in individual NATOPS and APR/MPR jackets. Loss of proficiency in all qualification events of a core skill causes the associated qualification to be lost. Regaining a qualification requires completing all R coded syllabus events associated with that qualification.

<u>Qualification</u> (TRACKING CODE)	Initial Event Qualification Requirements.
RVD (605)	DEFTAC 461, DEFTAC 462
NSQ (611)	NS-204, NS-205, TACNAV-223, TACNAV-224, RQD-611 and a designation letter signed by the commanding officer.
Flight Mech Initial Evaluation (680)	Core Introduction Phase complete and a designation letter signed by commanding officer.
Flight Mech Core Basic Evaluation (681)	Core Basic Phase Complete.

<u>Designation</u> (TRACKING CODE)	Initial Event Designation Requirements.
Flight Mech Annual NATOPS (682)	Annual NATOPS Re-qualification

9. Definitions

a. Currency. A control measure used to provide an additional margin of safety based on exposure frequency to a particular skill. It is a measure of time since the last event demanding that specific skill. Loss of currency does not affect a loss of Combat Readiness Percentage (CRP). For example, currency determines minimum altitudes in rules of conduct based upon the most

recent low altitude fly date. Specific currency requirements for individual type mission profiles can be found in the Aviation T&R Program Manual.

b. Proficiency. Proficiency is a measure of achievement of a specific skill. Re-fly factors establish the maximum time between demonstration of those particular skills. CRP is a measurement of "demonstrated proficiency." If an aircrew exceeds the re-fly factor for a particular event, the individual loses CRP for that particular event. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by completing an event with instructors from a like unit. If not feasible, the instructor shall regain proficiency by completing the event with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another aircraft commander or as designated by his commanding officer.

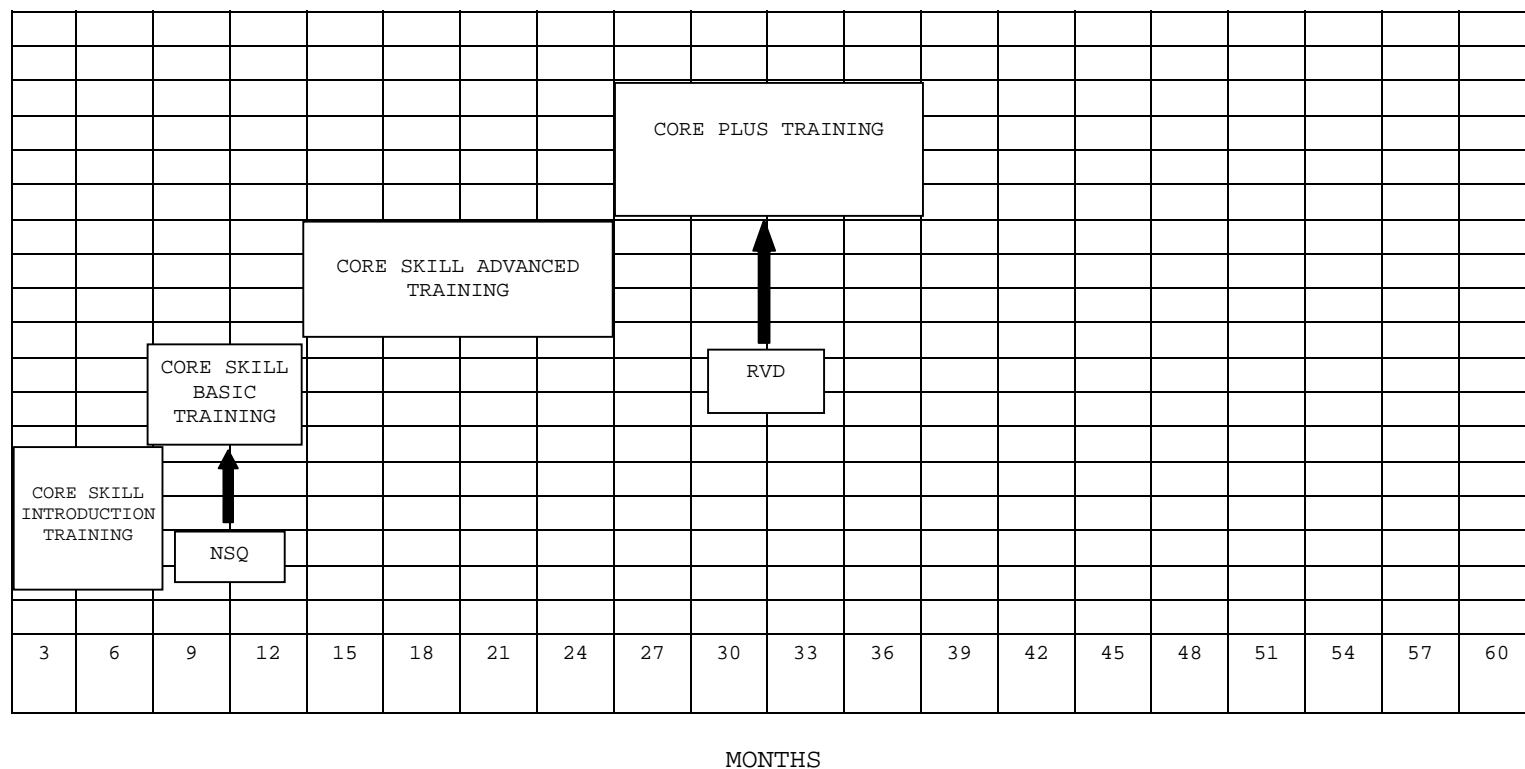
c. Qualification. A qualification is a status assigned to personnel based on demonstration of proficiency in a specific skill. Specific criteria to achieve qualifications shall be delineated in individual T&R chapters. Upon successful completion of qualification criteria, commanding officers may issue an appropriate qualification letter for inclusion in the NATOPS jacket and APR/MPR. Aircrew do not lose a qualification as a function of re-fly factor for individual events. Loss of proficiency (delinquent re-fly factor) for all associated qualification core skill events constitutes loss of that qualification. Re-qualification requires demonstration of proficiency. Specific re-qualification criteria shall be delineated in individual T&R chapters.

d. Designation. A designation is a status assigned to an individual based on leadership ability. A designation is a command specific, one-time occurrence and remains in effect until removed for cause. Specific designation requirements shall be delineated in individual T&R chapters. Commanders shall issue a designation letter to the individual upon the occasion of original designation, with appropriate copies for inclusion in the NATOPS jacket and APR.

10. KC-130FRT Flight Mechanic Progression Model. The training progression model below provides recommended core skill, qualification, and designation attainment timelines for the average flight mechanic.



# KC-130 FLIGHT MECHANIC CORE PROGRESSION MODEL



## 501. PROGRAM OF INSTRUCTION (POI) FOR BASIC FLIGHT MECHANIC

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-6	NACCS	NAS Pensacola, FL
7-13	KC-130 Flight Mechanic Ground	CNATT-MARU
14-26	Core Skill Introduction Training	Training Squadron
27-52	Core Skill Basic Training	Tactical Squadron
53-105	Core Skill Advanced Training	Tactical Squadron
106-158	Core Plus Training	Tactical Squadron

## 502. POI FOR REFRESHER FLIGHT MECHANIC

<u>WEEKS</u>	<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
1-8	Core Skill Basic Training	Tactical Squadron

## 503. POI FOR CONVERSION FLIGHT MECHANIC

<u>WEEKS</u>	<u>COURSES/PHASE</u>	<u>ACTIVITY</u>
1-3	Core Skill Basic Training	Tactical Squadron

510. GROUND TRAINING COURSES OF INSTRUCTION

<u>COURSE/PHASE</u>	<u>ACTIVITY</u>
Naval Aircrew Candidate Course	NAS Pensacola, FL
Flight Mechanic Maintenance Course	CNATT-MARU CHPT, NC
Flight Mechanic Flight Course	VMGRT-253 CHPT, NC
Weapons and Tactics Course (WTI)	MAWTS-1 Yuma, AZ
Advanced Airlift Tactics Training Course	St. Joseph, MO.
Survival, Evasion, Resistance and Escape	NAS Brunswick, ME
	NAS North Island, CA

511. AIRCREW TRAINING REFERENCES. The following references shall be utilized to ensure safe and standardized training procedures, grading criteria, and aircraft operation:

NATOPS General Flight and Operating Instructions (OPNAVINST 3710.7)  
 NATOPS Flight Manuals (NFM)  
 NATOPS Instrument Flight Manual (NIFM)  
 NATOPS Air-to-Air Refueling Manual (AAR Manual)  
 KC-130 Tactical Manual (TACMAN)  
 T&R Program Manual  
 MAWTS-1 Course Catalog  
 Allied Tactical Publication - 56 (ATP-56) Air to Air Refueling  
 Flight Clearance (FC) - issued by NAVAIR

520. EVENT TRAINING BASIC FLIGHT MECHANIC1. Core Skill Introduction Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Familiarization	13	52.0	55.0
Flight Mechanic Evaluation	1	4.0	5.0
<b>TOTAL</b>	<b>14</b>	<b>56.0</b>	<b>60.0</b>

2. Core Skill Basic Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Familiarization	1	2.0	0.5
Night Systems	2	4.0	3.0
Air Refueling	4	16.0	4.0
TAC NAV	3	8.0	2.5
Formation	1	3.0	1.5
Air Delivery	2	6.0	1.0
Over Water ICAO	1	8.0	1.0
Threat Reaction	1	2.0	1.0
Assault Landing Zone	2	4.0	2.0
Rapid Ground Refueling	1	0.0	1.0
<b>TOTAL</b>	<b>15</b>	<b>49.0</b>	<b>15.0</b>

3. Core Skill Advanced Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Tactical Navigation	1.0	3.0	10.0
Threat Reaction	1.0	3.0	10.0
<b>TOTAL</b>	<b>2</b>	<b>6.0</b>	<b>20.0</b>

4. Core Plus Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>	<u>PERCENT</u>
Tactical Navigation	1	2.0	1.0
Aerial Delivery	2	2.0	1.0
DEFTAC	2	4.0	2.0
Assault Landing Zones	1	2.0	1.0
	<u>6</u>	<u>10.0</u>	<u>5.0</u>
<b>TOTAL</b>	<b>37</b>	<b>116.0</b>	<b>100.0</b>

521. REFRESHER FLIGHT MECHANIC1. Core Skill Introduction Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>
Familiarization	13	52.0
NATOPS Evaluation	<u>1</u>	<u>4.0</u>
<b>TOTAL</b>	<b>14</b>	<b>56.0</b>

522. CONVERSION FLIGHT MECHANIC1. Core Skill Basic Training

<u>STAGE</u>	<u>FLIGHTS</u>	<u>HOURS</u>
Systems Review	4.0	16.0

530. EVENT PERFORMANCE REQUIREMENTS

1. Purpose. Familiarize the student flight mechanic in correct procedures for: turnaround inspections (preflight/post flight), servicing, engine start, taxi, run up, takeoff, cruise, descent, landing and securing, and normal and emergency procedures.

2. Ground Training. Each aircraft system introduced in the core skill introduction stage requires a minimum of 4.0 hours ground instruction, unless otherwise noted.

3. Crew Resource Management (CRM). CRM shall be briefed for all flights and/or events.

531. CORE SKILL INTRODUCTION TRAINING1. Familiarization

a. Purpose. Familiarize the student with the duties and procedures of the flight mechanic per current instructions.

b. General. Flight mechanic instructor will instruct student on all flights in this stage.

c. Crew Requirements. NATOPS minimum flight crew, to include, Flight Mechanic instructor IAW NAVAIR 01-75GAA-1.

d. Ground/Academic Training. Prior to each flight, 4.0 hours of ground instruction are required.

e. Flight Training (14 Flights, 56.0 Hours)

FAM-000

4.0R 1 KC-130 A

Goal. Introduce the student to turnaround inspections (preflight/post flight), squadron SOP, normal and emergency procedures.

Requirement. Flight mechanic instructor will instruct student flight mechanic on correct turnaround inspections (preflight/post flight), squadron SOP, normal and emergency procedures per current instructions.

Performance Standard. The student flight mechanic will be familiar with turnaround inspections (preflight/post flight), squadron SOP, normal and emergency procedures per current instructions.

Prerequisites. Flight Mechanic Ground Course.

Ordinance. N/A

External Syllabus Support. N/A

FAM-1004.0R 1 KC-130 A

Goal. Refine the student to turnaround inspections (preflight/post flight).

Requirement. Flight mechanic instructor will instruct student flight mechanic on correct turnaround inspections (preflight/post flight) per current instructions.

Performance Standard. Upon completion, the student flight mechanic will be familiar with turnaround inspections (preflight/post flight) per current instructions.

Prerequisite. FAM-000.

Ordinance. N/A

External Syllabus Support. N/A

FAM-1014.0R, C 1 KC-130 A

Goal. Familiarize the student flight mechanic on aircraft engine and GTC/APU systems.

Requirement. Flight mechanic instructor will instruct the student flight mechanic on aircraft engines.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aircraft engines, operation, possible malfunctions, and component locations.

Prerequisites. FAM-000, FAM-100

Ordinance. N/A

External Syllabus Support. N/A

<u>FAM-102</u>	<u>4.0</u>	<u>R 1 KC-130 A</u>	<p><u>Goal.</u> Familiarize the student flight mechanic with aircraft propeller systems.</p> <p><u>Requirement.</u> Flight mechanic instructor will instruct the student flight mechanic on aircraft propeller systems.</p> <p><u>Performance Standard.</u> Upon completion, the student flight mechanic will be familiar with aircraft propellers, operation, possible malfunctions, and component locations.</p> <p><u>Prerequisites.</u> N/A</p> <p><u>Ordinance.</u> N/A</p> <p><u>External Syllabus Support.</u> N/A</p>
<u>FAM-103</u>	<u>4.0</u>	<u>R, C 1 KC-130 A</u>	<p><u>Goal.</u> Familiarize the student flight mechanic with aircraft electrical systems.</p> <p><u>Requirement.</u> Flight mechanic instructor will instruct the student flight mechanic on aircraft electrical systems.</p> <p><u>Performance Standard.</u> Upon completion, the student flight mechanic will be familiar with aircraft electrical systems operation, possible malfunctions, and component locations.</p> <p><u>Prerequisites.</u> FAM-000, FAM-100.</p> <p><u>Ordinance.</u> N/A</p> <p><u>External Syllabus Support.</u> N/A</p>
<u>FAM-104</u>	<u>4.0</u>	<u>R, C 1 KC-130 A</u>	<p><u>Goal.</u> Familiarize the student flight mechanic with aircraft bleed air and anti-icing/de-icing systems.</p> <p><u>Requirement.</u> Instructor flight mechanic will instruct the student flight mechanic on aircraft bleed air and anti-icing/de-icing systems.</p> <p><u>Performance Standard.</u> Upon completion, the student flight mechanic will be familiar with aircraft bleed air and anti-icing/de-icing systems operation, possible malfunctions, and component locations.</p> <p><u>Prerequisites.</u> FAM-000, FAM-100.</p> <p><u>Ordinance.</u> N/A</p> <p><u>External Syllabus Support.</u> N/A</p>
<u>FAM-105</u>	<u>4.0</u>	<u>R, C 1 KC-130 A</u>	<p><u>Goal.</u> Familiarize the student flight mechanic with aircraft fuel system.</p>

Requirement. Instructor flight mechanic will instruct the student flight mechanic on aircraft fuel systems.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aircraft fuel systems, operation, possible malfunctions and component locations.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. N/A

FAM-106

4.0 R 1 KC-130 A

Goal. Familiarize the student flight mechanic on aircraft hydraulic systems.

Requirement. Instructor flight mechanic will instruct the student flight mechanic on hydraulic systems.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aircraft hydraulic systems, their operation, possible malfunctions, and component locations.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. N/A

FAM-107

4.0 R, C 1 KC-130 A

Goal. Familiarize the student flight mechanic with aircraft air conditioning and pressurization and oxygen systems.

Requirement. Instructor flight mechanic will instruct student flight mechanic on aircraft air conditioning/pressurization systems.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aircraft air conditioning/pressurization systems, operation, possible malfunctions, and component locations.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. N/A

FAM-108

4.0 R, C 1 KC-130 A

Goal. Familiarize the student flight mechanic on aircraft communication and navigation systems.

Requirement. Instructor flight mechanic will instruct student flight mechanic on aircraft communication and navigation systems.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aircraft communication/navigation systems, operation, possible malfunctions, and component locations.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. N/A

FAM-109

4.0 R 1 KC-130 A

Goal. Familiarize the student flight mechanic on aerial refueling systems, fixed wing aerial refueling observer procedures and duties.

Requirement. Instructor flight mechanic will instruct student flight mechanic on aircraft aerial refueling systems and observer duties.

Performance Standard. Upon completion, the student flight mechanic shall be familiar with aerial refueling systems, operation, possible malfunctions, component locations and observer duties.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. Fixed wing receiver.

FAM-110

4.0 R 1 KC-130 A

Goal. Familiarize the student flight mechanic on helicopter aerial refueling procedures and observer duties.

Requirement. The student flight mechanic shall be familiar on helicopter aerial refueling procedures and observer duties.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aerial refueling procedures and qualified as an aerial refueling observer.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. Rotary Wing Receiver

FAM-111

4.0 E, R 1 KC-130 A

Goal. Evaluate the student flight mechanic on aerial refueling procedures and observer duties.

Requirement. The student flight mechanic shall be familiar with aerial refueling procedures and observer duties.

Performance Standard. Upon completion, the student flight mechanic will be familiar with aerial refueling procedures and qualified as an aerial refueling observer.

Prerequisites. FAM-109, FAM-110.

Ordinance. N/A

External Syllabus Support. Fixed or rotary wing receiver.

FAM-112                      4.0                      R 1 KC-130 A

Goal. Familiarize the student flight mechanic on low level operations per current instructions.

Requirement. The student flight mechanic shall be familiar with low-level operations and procedures.

Performance Standard. Upon completion, the student flight mechanic will be familiar with low-level operations and procedures per TACMAN and NFM.

Prerequisites. FAM-000, FAM-100.

Ordinance. N/A

External Syllabus Support. N/A

FAM-113                      4.0                      R 1 KC-130 A

Goal. Review previous instructions as necessary.

Requirement. Instructor flight mechanic will review all previous instructions as necessary.

Performance Standard. Upon completion, the student flight mechanic will be familiar with low level procedures per current instructions.

Prerequisites. FAM-000 through FAM-112.

Ordinance. N/A

External Syllabus Support. N/A

## 2. Flight Mechanic NATOPS Initial Evaluation

- a. Purpose. Evaluate the student flight mechanic per NATOPS procedures.
- b. General. Flight mechanic evaluation will be conducted during this stage.
- c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event. See RQD-680 for event description.

## 532. CORE SKILL BASIC TRAINING

1. General. Upon completion of this phase of training, the flight mechanic will be day and NSQ in the non-LAT (NSQ) environment for the basic core skill mission areas. They include tactical navigation (TACNAV) in a threat



environment (THRX [I]), Assault Landing Zone operations (ALZ), FW/RW Air-To-Air Refueling (AR), Rapid Ground Refueling (RGR) operations and long-range operation. The focus will be on flight crew resource management, aircraft preflight preparation, location and use of emergency equipment, ground and in-flight emergency procedures, aircraft post flight procedures, systems operation, system malfunctions, corrective actions, fault isolation and in-flight fault isolation. At the completion of this phase, the flight mechanic (FM-2) shall be NATOPS qualified, designated a "Flight Mechanic 1" RQD-681. Flight mechanics receiving initial training shall be instructed by either current squadron flight engineer instructors, WTIs or NSIs (as required). Once they have completed the initial event, subsequent events shall be flown with like-qualified aircrew.

## 2. Familiarization

- a. Purpose. Maintain proficiency on administrative flights.
- b. General. Flight mechanic shall fly initial codes with a qualified instructor. Subsequent events may be flown with a qualified crew provided the flight mechanic meets the prerequisites.
- c. Crew Requirements. Minimum flight crew and flight engineer instructor.
- d. Academic/Ground Training. Each flight requires 1 hour of classroom instruction.

## 3. Administrative Flight

- a. Purpose. Maintain proficiency on administrative flights.
- b. Flight Training (1 flight, 2 Hours)

FM-200

2.0

1 KC-130 A

Goal. Maintain proficiency in normal and emergency procedures during day flight operations.

Requirement. Review normal and emergency procedures during day flight operations per current instructions.

Performance Standard. Upon completion, the student flight mechanic will be familiar with administrative flight procedures per current instructions.

Prerequisites. RQD-680.

Ordinance. NA

External Syllabus Support. NA

## 4. Night Systems Familiarization

- a. Purpose. To develop proficiency at operating aircraft at night using NVDs in a non-LAT environment.
- b. General. Flight mechanic receiving NS training shall be instructed by an NSI for all initial codes. Subsequent events and non-syllabus NS codes or NS optional codes may be initially flown with a proficient NSQ crewmember as long as the flight mechanic has the prerequisites for the event.

c. Crew Requirements. NATOPS minimum crew or greater, unless otherwise specified for the event.

d. Ground/Academic Training. MAWTS-1 NVD ASP courses and NITE lab (includes Night Vision Systems, N.S. Human Factors and Night Environment ASPs).

e. Flight Training (2 flights, 4 Hours)

NS-204                      2.0                      1 KC-130 A NS

Goal. HLL NVD Operations.

Requirement. Preflight shall include a flight station, cargo compartment and exterior lighting demonstration with NVDs. Mission must be flown per T&R Program Manual HLL standards.

Performance Standard. Satisfactory completion per NFM, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7\_.

Prerequisite. MAWTS-1 NVD ASP ground instruction and NITE lab.

Ordinance. N/A

External Syllabus Support. N/A

NS-205                      2.0                      1 KC-130 A NS

Goal. LLL NVD Operations.

Requirement. Conduct all operations included in NS-204 under LLL conditions.

Performance Standard. Satisfactory completion per NFM, KC-130 TACMAN (AS REQUIRED), and OPNAVINST 3710.7\_.

Prerequisite. NS-204.

Ordinance. N/A

External syllabus support. N/A

5. Aerial Refueling Familiarization

a. Purpose. Refine aerial refueling missions per current instructions.

b. General. Conduct normal and emergency procedures associated with aerial refueling in addition to crew responsibilities in both day, night and NVD procedures.

(1) Flight mechanic receiving NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NATOPS Flight Manual, NATOPS flight manual supplements, NATOPS Air-to-Air Refueling Manual, KC-130 TACMAN, and MAWTS-1 Tactical AR Courseware relating to fixed-wing AR procedures.

e. Flight Training (4 Flights, 16.0 Hours)

AR-210                      4.0                      1 KC-130/OFT/WST A/S

Goal. Day fixed wing aerial refueling procedures.

Requirement. Review normal and emergency aerial refueling procedures per KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. FM-200

Ordinance. N/A

External syllabus support. Fixed wing receiver aircraft and special use airspace.

AR-211                      4.0                      1 KC-130/OFT/WST A/S N

Goal. Introduce and refine night fixed wing aerial refueling procedures.

Requirement. Review normal and emergency aerial refueling procedures at night per KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. AR-210.

Ordinance. N/A

External syllabus support. Fixed wing receiver aircraft and special use airspace.

AR-212                      4.0                      1 KC-130/OFT/WST A/S

Goal. Day helicopter aerial refueling procedures.

Requirement. Review normal and emergency helicopter refueling procedures per KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. AR-210.

Ordinance. N/A

External syllabus support. Rotary wing receiver aircraft and special use airspace.

AR-213

4.0

1 KC-130/OFT/WST A/S N

Goal. Introduce night helicopter aerial refueling procedures.

Requirement. Review normal and emergency helicopter refueling procedures at night per KC-130 TACMAN and AR Manual. Use of EMCON procedures is optional.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. AR-212.

Ordinance. N/A

External syllabus support. Rotary wing receiver aircraft and special use airspace.

## 6. Tactical Navigation

a. Purpose. Train in low level procedures.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NATOPS Flight Manual, KC-130 TACMAN, and MAWTS-1 ASP Low Level Navigation Courseware.

e. Flight Training (3 Flights, 8.0 Hours)

TACNAV-220

2.0

1 KC-130/OFT/WST A/S

Goal. Day low-level procedures.

Requirement. Fly a low level route per KC-130 TACMAN procedures.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. FM-200.

Ordinance. N/A

External syllabus support. N/A

TACNAV-223      3.0                      1 KC-130/OFT/WST A/S NS

Goal. NVG HLL low level procedures.

Requirement. Fly a night low level route per KC-130 TACMAN procedures.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. TACNAV-220, NS-204, NS-205.

Ordinance. N/A

External syllabus support. N/A

TACNAV-224      3.0                      1 KC-130/OFT/WST A/S NS

Goal. NVG LLL low level procedures.

Requirement. Fly a night low level route per KC-130 TACMAN procedures.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. TACNAV-220, NS-204, NS-205.

Ordinance. N/A

External syllabus support. N/A

## 7. Formation

a. Purpose. Train in formation procedures.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NATOPS Flight Manual, KC-130 TACMAN, and MAWTS-1 ASP Low Level Navigation Courseware.

e. Flight Training (1 Flight, 3.0 Hours)

FORM-231                      3.0                      2 KC-130/OFT/WST A/S (N)

Goal. Proficiency training in formation procedures.

Requirement. Fly a 2-plane formation flight per NATOPS and TACMAN.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. TACNAV-220.

Ordinance. N/A

External syllabus support. N/A

## 8. Aerial Delivery

a. Purpose. Refine aerial delivery procedures per current instructions.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NFM, KC-130 TACMAN, and MAWTS-1 AD courseware information regarding personnel and cargo delivery procedures.

e. Flight Training (2 Flights, 6.0 Hours)

AD-241                      3.0                      1 KC-130/OFT/WST A/S

Goal. Introduce aerial delivery procedures.

Requirement. Fly and review aerial delivery mission of cargo or troops per TACMAN.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. FM-200.

Ordinance. N/A

External syllabus support. AD Platoon, USAF CCT, USMC MMT.

AD-242                      3.0                      1 KC-130/OFT/WST A/S NS

Goal. Introduce NVG aerial delivery procedures.

Requirement. Fly and review aerial delivery mission of cargo or troops and NVG considerations per TACMAN.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. AD-241

Ordinance. N/A

External syllabus support. AD Platoon, USAF CCT, USMC MMT.

## 9. Long-Range Over Water Operations

a. Purpose. Refine extended over water procedures.

b. General. Fly an extended over water flight and review over-water procedures placing emphasis on mission planning, use of aircraft performance data, and engine/fuel logs.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Specific fuel panel procedures, and NATOPS long range cruise considerations.

e. Flight Training (1 Flight, 8.0 Hours)

<u>LRNAV-250</u>	<u>8.0</u>	<u>1 KC-130 A (N)</u>
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Goal. Refine extended over water procedures.

Requirement. Fly an extended over water flight and review over-water procedures placing emphasis on mission planning, provisions, and fuel requirements.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200.

Ordinance. N/A

External syllabus support. N/A

## 10. Threat Reaction IR Counter-tactics/ASE Intro

a. Purpose. Refine the flight mechanic IR counter-tactics procedures.

b. General

(1) Flight mechanic receiving NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Prior to THRX(I)-261, the flight mechanic shall review pertinent chapters in the KC-130 TACMAN and receive:

- (1) MAWTS-1 ASP course on tactical aircrew coordination.
- (2) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).
- (3) MAWTS-1 ASP course on KC-130 specific threat counter-tactics.
- (4) Specific training on installed KC-130FRT ASE equipment.

e. Flight Training (1 Flight, 2.0 Hours)

<u>THRX-261</u>	<u>2.0</u>	<u>1 KC-130</u>	<u>A</u>	<u>(N)</u>
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Goal. Train in IR counter-tactics duties.

Requirement. Conduct and train in IR counter-tactics. Introduce pertinent ground loading procedures, system setup and operation of ASE systems in flight, emphasis on evasive flight techniques in coordination with ASE employment. Conduct defensive maneuvering against ground IR threat. Emphasize briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200, TACNAV-220.

Ordinance. 300 decoy flares.

External syllabus support. SST Team.

# 11. Assault Landing Zones (ALZ)

a. Purpose. Train the flight mechanic on ALZ and Expeditionary Airfield Operations.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review Assault Landing Zone operations in KC-130 TACMAN. Review MAWTS-1 ASP ALZ courseware. Familiarize the flight mechanic with ground emergencies in an austere environment and performance



data for specific circumstances and applicable pubs for unimproved runway operation.

e. Flight Training (2 Flights, 4.0 Hours)

ALZ-271                      2.0                      1 KC-130/OFT/WST A/S

Goal. Introduce ALZ procedures at improved fields.

Requirement. Introduce maximum effort takeoffs and landings at improved field per TACMAN. Review all appropriate performance data.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200

Ordinance. N/A

External syllabus support. MMT, CCT.

ALZ-272                      2.0                      1 KC-130/OFT/WST A/S NS

Goal. Introduce NVG ALZ procedures.

Requirement. Introduce maximum effort takeoffs and landings in a high light level per TACMAN. Review all appropriate performance data.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200, NS-204, ALZ-271.

Ordinance. N/A

External syllabus support. MMT, CCT.

12. Rapid Ground Refueling (RGR)

a. Purpose. Train the in RGR.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review KC-130 TACMAN RGR procedures and MAWTS-1 ASP RGR courseware. Complete a class that includes but is not

limited to a review of hand and arm signals, defense of site, flight operations around site, and crew responsibilities/CRM on the ground.

e. Flight Training (1 Flight, 0.0 Hours)

RGR-274                      0.0                      1 KC-130 S (N)

Goal. Train in RGR.

Requirement. Conduct RGR with actual aircraft engines running per NATOPS and TACMAN.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200.

Ordinance. N/A

External syllabus support. N/A

533. CORE SKILL ADVANCED TRAINING

1. General. Upon completion of this phase, the flight mechanic will be proficient in LAT (TACNAV) low level, Assault Landing Zone operations, basic aerial delivery procedures and Defensive Tactics against surface-based threats THRX(R). The purpose of this phase of training is to provide a core skill advanced flight mechanic. Flight mechanics receiving initial training shall be instructed by either Flight Engineer Instructor (RQD-690), or WTI (RQD-692) when required.

2. Tactical Navigation

a. Purpose. Qualify the flight mechanic, or to maintain proficiency for the LAT qualified flight mechanic, in both day and night LAT in the unique tasks and requirements associated with low altitude tactics flights in a low to medium ground threat environment.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Engineer or Loadmaster as long as the flight mechanic has met the prerequisites for the event. LAT rules of conduct are contained in KC-130 TACMAN. All LAT sorties require all crewmembers to be LAT qualified and proficient.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Per the MAWTS-1 Course Catalog. Complete MAWTS-1 ASE courseware for LAT and review KC-130 TACMAN or published TTP as appropriate.

e. Flight Training (1 Flight, 3.0 Hours)

TACNAV-321      3.0      R 1 KC-130/OFT/WST A/S

Goal. Introduce and qualify the flight mechanic, or to maintain proficiency for the LAT qualified flight mechanic in the duties associated with low altitude tactics flights in a low to medium ground threat environment.

Requirement. Emphasize cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, crew coordination and combat entry/exit checklists. This event may include air-to-air refueling, aerial delivery or any type of air/land delivery.

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, TACNAV-220.

Ordinance. N/A

External Support. Approved LAT training route, Threat Emitters.

### 3. Threat Reaction (Radar) (THRX [R])

a. Purpose. Qualify the flight mechanic in the coordinated use of defensive maneuvering and the Aircraft Survivability Suite (ASE) against surface-to-air threat systems. Familiarize the flight mechanic with the procedures incorporated in the use of the RVD.

b. General. Qualify the flight mechanic, or maintain proficiency for the DEFTAC qualified flight mechanic, in the unique tasks and requirements associated with defensive tactics flights in a low to medium air threat environment. This phase of instruction may be taught locally utilizing the MAWTS-1 ASP, or in conjunction with AATTC, by a qualified instructor.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Prior to THRX(R)-360, the flight engineer shall review pertinent chapters in the KC-130 TACMAN and receive:

- (1) MAWTS-1 ASP course on Tactical Aircrew Coordination.
- (2) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).
- (3) MAWTS-1 ASP course on KC-130 Specific Threat Counter-Tactics.
- (4) Specific training on installed KC-130FRT ASE equipment.
- (5) Complete THRX (IR)-261.

#### e. Flight Training (1 Flight, 3.0 Hours)

THRX-360      3.0      1 KC-130 A (N)

Goal. Train the flight mechanic in IR counter-tactics duties.

Requirement. Conduct and train in Radar Counter-tactics.

Refine FE to pertinent ground loading procedures, system setup and operation of ASE systems in flight, emphasis on evasive flight techniques in coordination with ASE employment. Conduct defensive maneuvering against Radar threat. Emphasize briefing, conduct of flight, and lookout doctrine.

Performance Standard. Flight mechanic shall perform responsibilities/duties per NFM.

Prerequisite. FM-200, TACNAV-220, THRX-261.

Ordinance. 160 decoy chaff, 140 flares.

External syllabus support. Approved LAT training route, Threat Emitters, SST team.

#### 534. CORE PLUS TRAINING

1. General. Upon completion of this level, the flight mechanic will be proficient in unaided tactical navigation, day and night high altitude aerial delivery, battlefield illumination aerial delivery, defensive tactics against an air-based threat, and night time unaided assault landings. Flight mechanics receiving initial training shall be instructed by a current Squadron Stage Instructor, DEFTACI, NSI or WTI (as required). Once they have completed the initial event, subsequent events may be flown with proficient aircrew.

#### 2. Tactical Navigation

a. Purpose. Qualify the flight mechanic, or to maintain proficiency for the LAT qualified flight mechanic, in both day and night LAT in the unique tasks and requirements associated with low altitude tactics flights in a low to medium ground threat environment.

#### b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight mechanic as long as the flight mechanic has met the prerequisites for the event. LAT rules of conduct are contained in KC-130 TACMAN. All LAT sorties require all crewmembers to be LAT qualified and proficient.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Per the MAWTS-1 Course Catalog. Complete MAWTS-1 ASE courseware for LAT and review KC-130 TACMAN or published TTP as appropriate.

#### e. Flight Training (1 Flight, 2.0 Hours)

<u>TACNAV-422</u>	<u>2.0</u>	<u>1 KC-130/OFT/WST A/S N</u>
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Goal. Introduce and qualify the flight mechanic in unaided low level navigation or to maintain proficiency for the

qualified flight mechanic, in the duties associated with night low level flights in a low to medium ground threat environment.

Requirement. Emphasize cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, crew coordination and combat entry/exit checklists. This event may include air-to-air refueling, aerial delivery or any type of air/land delivery.

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, TACNAV-220, TACNAV-321.

Ordinance. N/A

External Support. Approved training route, threat emitters.

### 3. Aerial Delivery

a. Purpose. Refine high altitude environment aerial delivery procedures per TACMAN.

#### b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ Flight Mechanic as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review NFM, KC-130 TACMAN, and MAWTS-1 AD courseware information regarding personnel and cargo delivery procedures.

#### e. Flight Training (2 Flights, 4.0 Hours)

AD-442

2.0

1 KC-130/OFT/WST A/S (N)

Goal. Introduce and qualify the flight mechanic, or to maintain proficiency for the qualified flight mechanic, in the duties associated with high altitude environment aerial delivery.

Requirement. Emphasize cargo compartment preparation, crew briefing, lookout doctrine, scan for threats, crew coordination and combat entry/exit checklists. This event may include air-to-air refueling, aerial delivery or any type of air/land delivery.

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, AD-241.

Ordinance. N/A

External Support. AD Platoon.

AD-444

2.0

1 KC-130/OFT/WST A/S N

Goal. Introduce and qualify the flight mechanic, or to maintain proficiency for the qualified flight mechanic in the duties and procedures associated with battlefield illumination.

Requirement. Emphasize cargo compartment preparation, crew briefing, crew coordination and combat entry/exit checklists.

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, AD-241.

Ordinance. LU-2A/B

External Support. Ordnance personnel, approved training area.

#### 4. Defensive Tactics (DEFTAC)

a. Purpose. Refine the Flight Mechanic duties in Defensive Tactics procedures. Introduce defensive tactics utilized in air-to-air engagements by combining maneuvering and use of the ASE suite. Emphasize lookout doctrine and use of the Rear Vision Device (RVD).

b. General. The DEFTAC qualification requirements consist of DEFTAC-461 and DEFTAC-462. The following is recommended however not required:

(1) Aircraft preferred to have fully operational ASE suite.

(2) If ASE-equipped aircraft is used, appropriate chaff and decoy flares shall be loaded prior to flight.

c. Instructor Requirement. DEFTAC shall be instructed by a WTI.

d. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

e. Ground/Academic Training. Academic prerequisites Per MAWTS-1 KC-130FRT Defensive Tactics Course. Prior to DEFTAC-461, the Flight Mechanic shall receive:

(1) This phase of instruction may be taught locally utilizing the MAWTS-1 ASP, or in conjunction with AATTC, by a qualified Instructor DEFTAC shall be instructed by a DEFTACI/WTI.

(2) MAWTS-1 ASP course on Tactical Aircrew Coordination.

(3) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).

(4) MAWTS-1 ASP course on KC-130 Specific Threat Counter-Tactics.

(5) Specific training on installed KC-130FRT ASE equipment.

f. Flight Training (2 Flights, 4.0 Hours)

DEFTAC-461      2.0      R 1 KC-130, 1 Adversary A

Goal. Introduce defensive tactics mission maneuvering relative to an air threat.

Requirement. The flight mechanic will perform normal and emergency procedures during a flight involving the use of defensive tactics. Emphasize crew briefing, lookout doctrine, scan for air threats and terrain clearance, crew coordination and combat entry/exit checklists. This event may include escorts. Emphasize lookout doctrine and use of the Rear Vision Device (RVD).

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, TACNAV-220, TACNAV-321.

Ordinance. Standard chaff and flare load-out.

External Syllabus Support. Appropriate aggressor aircraft.

DEFTAC-462      2.0      1 KC-130, 2 Adversaries A

Goal. Refine and maintain proficiency for the DEFTAC qualified flight mechanic during a defensive tactics mission maneuvering relative to an air threat.

Requirement. Perform normal and emergency procedures during a flight involving the use of defensive tactics. Emphasize crew briefing, lookout doctrine, scan for air threats and terrain clearance, crew coordination and combat entry/exit checklists. This event may include escorts. Emphasize lookout doctrine and use of the Rear Vision Device (RVD).

Performance Standard. Per the NFM and KC-130 TACMAN.

Prerequisite. FM-200, TACNAV-220, TACNAV-321, DEFTAC-461.

Ordinance. Standard chaff and flare load-out.

External Syllabus Support. Appropriate aggressor aircraft.

## 5. Assault Landing Zones (ALZ)

a. Purpose. Train on ALZ and Expeditionary Airfield Operations.

b. General

(1) Flight mechanic conducting NS training shall be instructed by an NSI for all NSQ syllabus initial codes. Subsequent events and non-syllabus NS or NS optional codes may be initially flown with a proficient NSQ flight engineer or loadmaster as long as the flight mechanic has met the prerequisites for the event.

(2) A qualified instructor (FE) shall accompany all initial qualified crewmembers.

c. Crew Requirements. NATOPS minimum crew or greater unless otherwise specified for the event.

d. Ground/Academic Training. Review ALZ operations in KC-130 TACMAN. Review MAWTS-1 ASP ALZ courseware. Familiarize the student with ground emergencies in an austere environment and performance data for specific circumstances, and review applicable pubs for unimproved runway operation.

e. Flight Training (1 Flight, 2.0 Hours)

ALZ-471                      2.0                      1 KC-130/OFT/WST A/S N

Goal. Introduce unaided TLZ procedures at improved/unimproved fields.

Requirement. Be exposed to unaided maximum effort takeoffs and landings at improved field per TACMAN. Review all appropriate performance data.

Performance Standard. Perform responsibilities/duties per NFM.

Prerequisite. FM-200, ALZ-271.

Ordinance. N/A

External Syllabus Support. MMT, CCT.

550. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. Purpose. To provide a vehicle for tracking codes associated with qualifications and designations.

2. General

a. E-coded sorties are evaluation sorties. E-coded sorties in the 600-level phase may be logged in conjunction with any sortie that completes its stage. CRP is not awarded for these 600-level sorties; however, CRP credit may be obtained by logging the appropriate training code(s) in the 200-400 level syllabus. Once the flight to attain the qualification/designation is complete, a letter from the squadron commanding officer awarding the qualification/designation shall be placed in the NATOPS and APR before that qualification/designation can be utilized.

b. After the commanding officer has designated the trainee in writing as a flight mechanic, the operations department shall log RQD-680.

3. Functional Check Flight (FCF) Qualifications

a. Purpose. Qualify in FCF procedures.

b. Flight Training (1 Flight, 2.0 Hours)

RQD-602                      Functional Check Flight 2.0                      1 KC-130 A

Goal. Qualify flight mechanic in FCF procedures.

Requirement. Assist the flight engineer with an engine run and maintenance system operational checks. Be familiar with all aspects of pre-flight and post flight procedures involved with an FCF.



Performance Standard. Satisfactorily execute procedures per the NFM, OPNAVINST 3710.7\_\_, and OPNNVINST 4790.2\_\_.

#### 4. Rear Viewing Device (RVD) Tracking Code

a. Purpose. Provide a tracking code RVD.

b. General. Conduct THRX/DEFTAC flight using RVD from forward escape hatch position. Emphasize lookout doctrine, scan for air threats, terrain clearance, and crew coordination.

(1) This flight may be flown in conjunction with any threat reaction, THRX, or DEFTAC.

(2) The following is recommended:

(a) Aircraft preferred to have fully operational ASE suite.

(b) If ASE-equipped aircraft is used, appropriate chaff and decoy flares shall be loaded prior to flight.

c. Ground Training. Academic prerequisites per MAWTS-1 KC-130FRT Defensive Tactics Course. This phase of instruction may be taught locally utilizing the MAWTS-1 ASP, or in conjunction with AATTC, by a qualified DEFTACI/WTI. Prior to DEFTAC-461, the flight mechanic shall receive:

(1) MAWTS-1 ASP course on Tactical Aircrew Coordination.

(2) MAWTS-1 ASP course on MAGTF Ground Based Air Defense System (GBADS).

(3) MAWTS-1 ASP course on KC-130 Specific Threat Counter-Tactics.

(4) Specific training on installed KC-130FRT ASE equipment.

d. Flight Training (1 Flight, 2.0 Hours)

RQD-605                      2.0                      1 KC-130 A

Goal. Qualify and maintain currency for the flight mechanic proficiency in RVD procedures.

Requirement. Conduct THRX/DEFTAC flight using RVD from forward escape hatch position. Emphasize lookout doctrine, scan for air threats, terrain clearance, and crew coordination.

Performance Standard. Satisfactorily execute procedures per the TACMAN, NFM, and OPNAVINST 3710.7\_\_.

Prerequisite. FM-200, TACNAV-220, TACNAV-321.

Ordinance. Standard chaff and flare load-out.

#### 5. Night Systems Qualification (NSQ)

a. Purpose. NSQ qualification.

b. General. Flight mechanic receiving instruction leading to NSQ will be qualified in the equivalent day sortie.

(1) An NSI crewmember shall conduct this phase of instruction.

(2) NVG time logged as part of NITE lab will count towards NSQ qualification.

c. Ground Training. MAWTS-1 NVD ASP courses and NITE lab (includes Night Vision Systems, N.S. Human Factors and Night Environment ASPs).

d. Flight Training (1 Flight, 4.0 Hours)

RQD-611                      4.0                      1 KC-130 A NS

Goal. Qualify in flights using NVDs.

Requirement. Demonstrate ability to perform flight mechanic duties using NVDs.

Performance Standard. Satisfactorily execute the procedures per NFM, KC-130 TACMAN, TTP (AS REQUIRED), and MAWTS-1 ASP for NSQ.

Prerequisite. NS-204, NS-205, RQD-681 (FM-1).

6. Flight Mechanic NATOPS Evaluations

a. Purpose. Evaluate per NATOPS procedures.

b. General. Flight mechanic evaluations will be conducted during this phase. Upon successful completion of these stages, the flight mechanic under instruction shall be designated the appropriate level of qualification.

c. Crew Requirements. Minimum crew and flight mechanic assistant NATOPS instructor.

d. Flight Training (3 Flights, 12.0 Hours)

RQD-680                      4.0                      E, R 1 KC-130 A (N)

Goal. Flight mechanic initial NATOPS evaluation (FM-2).

Requirement. NATOPS instructor/evaluator will evaluate student flight mechanic per NATOPS procedures. RON flight is preferred.

Performance Standard. Perform responsibilities/duties per NFM, 3710.7\_, 4790.2\_ and associated MIMS.

Prerequisite. All core skill introduction codes.

RQD-681                      4.0                      R, E 1 KC-130 A (N)

Goal. Flight mechanic basic NATOPS evaluation (FM-1).

Requirement. NATOPS instructor/evaluator will evaluate flight mechanic per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, ALZ, RGR, or combination mission. RON flight is preferred.

Performance Standard. Perform responsibilities/duties per NFM, TACMAN, 3710.7\_, 4790.2\_ and associated MIMS.

Prerequisite. FAM-200 through FAM-274, RQD-611.

RQD-682

4.0

R, E 1 KC-130 A

Goal. Annual NATOPS evaluation and subsequent annual evaluations.

Requirement. NATOPS instructor/evaluator will evaluate flight mechanic per NATOPS procedures. RON flight is preferred. Should be either AR, AD, LL, ALZ, RGR, or combination mission. RON flight is preferred.

Performance Standard. Perform responsibilities/duties per NFM, TACMAN, 3710.7\_, 4790.2\_ and associated MIMS.

Prerequisite. Successful completion of NATOPS open and closed books tests per NFM.

#### 561. SYLLABUS MATRIX

AIRCRAFT: KC-130

MOS: 6276 CREW POSITION: FLIGHT MECHANIC

#### CORE INTRODUCTION

STAGE	CODE	EVENT	HRS	CRP	REFLY	C	R	E	NS	NSQ	REMARKS
FAM	000	GROUND FAM	4.0	4.0	*		X				
FAM	100	PREFLIGHT	4.0	4.0	*		X				
FAM	101	ENGINES	4.0	4.0	*	X	X				
FAM	102	PROPS	4.0	4.0	*		X				
FAM	103	ELECTRICAL	4.0	4.0	*	X	X				
FAM	104	BLEED AIR	4.0	4.0	*	X	X				
FAM	105	FUEL SYSTEMS	4.0	4.0	*	X	X				
FAM	106	HYDRAULICS	4.0	4.0	*		X				
FAM	107	AIR COND/OXYGEN	4.0	4.0	*	X	X				
FAM	108	COMM/NAV	4.0	4.0	*	X	X				
FAM	109	FWAR	4.0	4.0	*		X				
FAM	110	HAR	4.0	4.0	*		X				
FAM	111	AR OBS EVAL	4.0	4.0	*		X	X			
FAM	112	LOW LEVEL	4.0	4.0	*		X				
FAM	113	PRE CHECK	4.0	4.0	*		X				

**CORE BASIC**

STAGE	CODE	HRS	REFLT	CRP	REMARKS
FM	200	2.0	90	1.0	
NS	204	2.0	365	0.5	NS
NS	205	2.0	365	0.5	NS
AR	210	4.0	365	0.5	
AR	211	4.0	365	1.0	N
AR	212	4.0	365	0.5	
AR	213	4.0	365	1.0	N
TACNAV	220	2.0	365	1.0	
TACNAV	223	3.0	180	1.0	NS
TACNAV	224	3.0	180	1.0	NS
FORM	231	3.0	180	0.5	2 AC (N)
AD	241	3.0	365	0.5	
AD	242	3.0	365	1.0	NS
LRNAV	250	8.0	365	1.0	(N)
THRX	261	2.0	365	1.0	(N)
ALZ	271	2.0	180	1.0	
ALZ	272	2.0	365	1.0	NS
RGR	274	0.0	365	1.0	(N)

**CORE SKILL ADVANCED**

STAGE	CODE	HRS	REFL	CRP	R	REMARKS
TACNAV	321	3.0	365	10.0	X	
THRX	360	3.0	365	10.0		(N)

**CORE PLUS**

STAGE	CODE	HRS	REFLT	CRP	R	E	REMARKS
TACNAV	422	2.0	*	1.0			N
AD	442	2.0	*	0.5			
AD	444	2.0	*	0.5			N
DEFTAC	461	2.0	*	1.0	X		
DEFTAC	462	2.0	*	1.0			
ALZ	471	2.0	*	1.0			N

**REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS**

STAGE	CODE	HRS	A/C OR SIM	R	E	NOTES
RQD	602	2.0	A			FCF QUALIFICATIONS
RQD	605	2.0	A			RVD FAMILIARIZATION TRACKER
RQD	611	4.0	A			NSQ
RQD	680	4.0	A	X	X	FM-2 NATOPS CHECK
RQD	681	4.0	A		X	FM-1 NATOPS CHECK
RQD	682	4.0	A		X	FM ANNUAL NATOPS <b>REFLY 365</b>

562. T&R CHAINING TABLES. Event chaining allows for the completion of more complex and/or advanced events using the same skills to update proficiency status of events. Only events in a sequence entailing demonstration of equivalent skills shall be chained.

a. When a T&R event is logged, the proficiency dates of other T&R events (usually lower in number) may be updated. The T&R code that is logged is known as the "chaining code," and the updated codes are "chained codes." Chained codes are not always updated when a chaining code is logged.

b. Conditional Chaining. The following environmental conditions further specify which T&R codes are chain-updated.

(1) Night Optional. Chained codes annotated with parentheses around them, e.g. (200), are only chain-updated if the chaining code is flown at night.

(2) Night Systems Optional. Chained codes annotated with parentheses and NS after them, e.g. (200 NS), are only chain-updated if the chaining code is flown using night systems.

(3) Light Level Optional. Chained codes annotated with parentheses and HLL after them, e.g. (200 HLL), are only chain-updated if the chaining code is flown using NS during a high light level period. Chained codes annotated with parentheses and LLL after them, e.g. (200 LLL), are only chain-updated if the chaining code is flown using NS during a low light level period.

c. Syllabus Event Conversion Matrix. The syllabus event conversion matrix is used to convert T&R syllabus event proficiency status of the previous T&R syllabus into event proficiency status of the current T&R for individuals.

#### EVENT UPDATE CHAINING

<u>FLIGHT</u>	<u>FLIGHTS UPDATED</u>
200	
204	200
205	200, 204
210	200
211	200, 210
212	200
213	200, 212
220	200
223	200, 220
224	200, 220, 223
231	200
241	200
242	200, 204, 205, 241
250	200
261	200, 220
271	200
272	200, 204, 205, 271
274	200
321	200, 220
360	200, 220, 261
422	200, 220
442	200, 241
444	200, 241
461	200, 220

**FLIGHT**                      **FLIGHTS UPDATED**

462                      200, 220, 461

471                      200, 271

681                      680

682                      680, 681

OLD STAGE	NEW TRAINING CODE	NEW STAGE	NEW TRAINING CODE
CK 190	RQD 680	LAT 432	TACNAV 321
		LAT 433	TACNAV 321
FM 200	FM 200	LAT 434	TACNAV 321
FM 201	FM 200	DEFTAC 460	DEFTAC 461
AR 210		DEFTAC 461	DEFTAC 462
AR 211		DEFTAC 462	DELETED
AR 212			
AR213			
LL 220	TACNAV 220		
LL 221	TACNAV 422		
FORM 230	FORM 231		
FORM 231	FORM 231	NUC 600	DELETED
AD 240	AD 241	NVG 610	DELETED
OWICAO 250	LRNAV 250	NVG 601	NS 204 / NS 205
TLZ 270	ALZ 271	NVG 620	TACNAV 223
RGR 273	RGR 274	NVG 621	TACNAV 224
FCF 280	RQD 602	NVG 622	DELETED
CK 290	RQD 681	NVG 630	FORM 231
		NVG 640	AD 242
LLAR 310	DELETED	NVG 660	DELETED
LLAR 311	DELETED	NVG 670	ALZ 272
LLAR 312	DELETED	NVG 671	ALZ 273
LLAR 313		NVG 690	RQD-611
OLAR 314	DELETED	NVG 695	DELETED
OLAR 315	DELETED		RQD-605 RVD
AD 340	AD 241 442		
AD 343	AD 444		
ASE 360	THRX (I) 261 (R) 360		
TLZ 370	ALZ 271		
TLZ 371	ALZ 471		
RGR 373	RGR 274		
CK 390	RQD 682		